

Teaching Plan

AY 2022-23



PRIYADARSHINI INSTITUTE OF SCIENCE AND TECHNOLOGY FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to JNTUH Hyderabad)

SaiPrabhath Nagar , Khammam Rural -507003, Khammam Dist., Telangana State.

Website: www.priw.ac.in Email Id: jks_edu@yahoo.com Cell: +91-92466 25050.

TEACHING PLAN

Name of the Faculty: Dr. P. Sunil Gavaskar

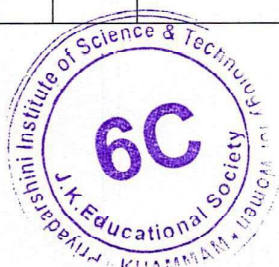
Subject Code:CS603PC

Subject Name: Design Analysis and Algorithms

Academic Year: 2022-23

B.Tech III Year II Sem

S.NO	Unit	TOPIC	Number of Sessions Planned	Teaching method/Aids	REFERENCE
1.	I	Introduction to Algorithms, specification of Algorithms	1	Chalk and Talk	T1, R1
2.		Pseudo code	1	Chalk and Talk	T1, R1
3.		Recursive Algorithms	1	Chalk and Talk	T1, R1
4.		Performance Analysis-Space complexity	1	Chalk and Talk	T1, R1
5.		Tutorial1(Time Complexity)	1	Chalk and Talk	T1, R1
6.		Time Complexity using global method	1	Chalk and Talk	T1, R1
7.		Time complexity using step count method	1	Chalk and Talk	T1, R1
8.		Asymptotic Notations	1	Chalk and Talk	T1, R1
9.		Randomized Algorithms	1	Chalk and Talk	T1, R1
10.		Tutorial2(Quick sort)	1	Chalk and Talk	T1, R1
11.		Divide and conquer general method	1	Chalk and Talk	T1, R1
12.		Recurrence relations	1	Chalk and Talk	T1, R1
13.		Binary search using divide and conquer	1	Chalk and Talk	T1, R1
14.		Quick Sort using Divide and Conquer	1	Chalk and Talk	T1, R1
15.		Tutorial3(Strassen matrix multiplication)	1	Chalk and Talk	T1, R1
16.		Merge sort using Divide and Conquer	1	Chalk and Talk	T1, R1





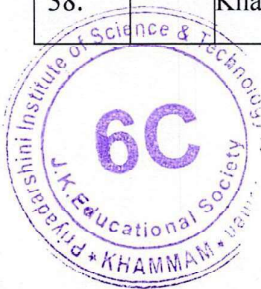
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17.		Strassen's matrix multiplication using Divide and Conquer	2	Chalk and Talk	T1, R1
18.		Disjoint sets and its operations union and find Algorithms	1	Chalk and Talk	T1, R1
19.		Weighted union and collapsing find operations	1	Chalk and Talk	T1, R1
20.		Articulation point	1	Chalk and Talk	T1, R1
21.		Biconnected components	1	Chalk and Talk	T1, R1
22.	II	Tutorial4 (Backtracking General method)	1	Chalk and Talk	T1, R1
23.		Hamiltonian cycle)	1	Chalk and Talk	T1, R1
24.		8-Queens problem	1	Chalk and Talk	T1, W1
25.		Tutorial 5(Sum of subsets problem)	2	Chalk and Talk	T1, R1
26.		Graph coloring problem	1	Chalk and Talk	T1, R1
27.		Hamiltonian circuit problem	2	Chalk and Talk	T1, R1
28.		Greedy method introduction	1	Chalk and Talk	T1, R1
29.	III	Optimal binary search trees	2	Chalk and Talk	T1, R1
30.		Tutorial 6(Knapsack problem)	1	Chalk and Talk	T1, W2
31.		Knapsack problem	2	Chalk and Talk	T1, R1
32.		All pairs shortest path problem	2	Chalk and Talk	T1, R1
33.		Travelling sales person problem	2	Chalk and Talk	T1, R1
34.		Reliability design	2	Chalk and Talk	T1, R1
35.		Tutorial 7(Single source shortest path)	1	Chalk and Talk	T1, R1
36.		Greedy method:General method	1	Chalk and Talk	T1, R1
37.		Job sequencing with dead lines	2	Chalk and Talk	T1, R1
38.		Knapsack problem	2	Chalk and Talk	T1, R1





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39.	IV	Minimum cost spanning trees	2	Chalk and Talk	T1, R1
40.		Tutorial 8(Optimal binary search tree)	1	Chalk and Talk	T1, R1
41.		Single source shortest path problem	2	Chalk and Talk	T1, R1
42.	V	Branch and bound introduction and general method	1	Chalk and Talk	T2, R1
43.		Travelling sales person problem	1	Chalk and Talk	T2, R1
44.		0/1 knapsack problem-LC Branch and bound	2	Chalk and Talk	T2, R1
45.		Tutorial 9(0/1 knapsack using LCBB)	2	Chalk and Talk	T2, R1
46.		0/1 knapsack problem-FIFO Branch and bound	2	Chalk and Talk	T2, R1
47.		Travelling sales person problem-row and column minimization	2	Chalk and Talk	T2, R1
48.		Travelling sales person problem-Full and dynamic reduction	1	Chalk and Talk	T2, R1
49.		NP hard and NP complete problems-Basic concepts	1	Chalk and Talk	T2, R1
50.		Non-deterministic algorithms	1	Chalk and Talk	T2, R1
51.		NP hard and NP complete	2	Chalk and Talk	T1, R2
52.		Proving NP hard problems	1	Chalk and Talk	T2, R2
53.		Proving NP complete problems	1	Chalk and Talk	T2, R2
54.		Properties of NP complete and NP had problems	1	Chalk and Talk	T2, R2
55.		Cook's theorem	1	Chalk and Talk	T2, R2

TEXT BOOKS

1. Fundamentals of computer algorithms, 2nd edition, EllisHorowitz, Sartaj SahniandS. Rajasekharan, University press.
2. Design and Analysis of Algorithms, P.H.Dave, 2nd Edition, pearson Education



Estd: 2009

JNTUH College Code: 6C

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1. Algorithm Design: Foundations, Analysis and Internet examples, M.T. Goodrich and R. Tomassia, John Wiley and sons.
2. Design and Analysis of Algorithms, S. Sridhar, Oxford Univ. Press

WEB REFERENCES

1. https://www.tutorialspoint.com/design_and_analysis_of_algorithms/index.htm
2. <https://www.geeksforgeeks.org/fundamentals-of-algorithms/>




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